Data management: File information

This document provides information on the data files.

All header-less message log csv files have the following columns unless otherwise noted in the description:

- coreData_timestamp: unix timestamp in seconds, taken at the time record was captured in the field.
- coreData_payload_hex: message payload in hexadecimal string. The data collected will primarily be Signal Phasing and Timing (SPaT), MAP, and Basic Safety Message (BSM) data as defined in SAE J2735 standard. As defined in the standard, the data uses UPER encoding and is in ASN.1 format.

File Manifest

Data files are included as zipped attachments to this dataset. **Names for the zipped attachments are bolded and underlined. Names of folders within the zipped file are bolded.** Names of files within the zipped file are underlined.

- **RAW_TEST_09_19.zip**: All data logs for test conducted on 09/19/2019
  - **RSUCapture**: All logs for data generated and recorded at the RSU
    - **morning_spat_2**: Recorded during morning session of the test run
      - tx_ota.csv and .pcap: all transmitted messages recorded at ota interface in csv and pcap format
      - tx_r1a.pcap: all messages transmitted at r1a interface and this log did not contain any spat messages
      - tx_r1c.csv and .pcap: all transmitted messages recorded at r1c interface in csv and pcap format
      - tx.csv and .pcap: all transmitted messages recorded in csv and pcap format
    - **afternoon_spat_2**:
      - RSU_4_1-cw-mon-tx-20190919160953.csv and .pcap: All transmitted messages at the cw-mon-tx interface of the RSU logged in csv and pcap format
      - RSU_4_1-cw-mon-txa-20190919160953.csv and .pcap: All transmitted messages at the cw-mon-txa interface of the RSU logged in csv and pcap format
      - RSU_4_1-cw-mon-txb-20190919160953.csv and .pcap: All transmitted messages at the cw-mon-txb interface of the RSU logged in csv and pcap format
  - **VCCLOG_09_19_mov:** This folder contains logs for the moving (mov) vehicle

        - **OBUCapture**: (where X = {1,2,3,4} and Y = {a,b}. Tests 1 and 2 were conducted during the morning session and tests 3,4 were conducted during the afternoon session.)
            - testXY_spat.csv: OBU receive logs containing SPAT messages only recorded during test run XY in csv format
            - testXY.csv and .pcap: OBU receive logs containing all messages recorded during test run XY in csv and pcap format
        - vccmov.csv: This file contains SPAT messages, recorded through VCC using cellular networks, at the laptop installed in the moving vehicle.
    - **VCCLOG_09_19_sta:** This folder contains logs collected at the stationary vehicle during the same test time. The filenames have similar structure as the moving vehicle logs.

- **RAW_TEST_09_26.zip:** All data logs for test conducted on 09/26/2019.
    - **RSUCapture:**
        - **morning_1**: (where X = {tx,txb} and Y is the different timestamps that are recorded in the filenames)
            - RSU_4_1_cw-mon-X-Y.csv and .pcap: RSU logs for all messages recorded at interface X. There are multiple logs with different Y's and the value of Y determines when the logs were completed.
            - RSU_4_1_cw-mon-X-Y_spat.csv: RSU logs for SPAT messages recorded at interface X. There are multiple logs with different Y's and the value of Y determines when the logs were completed.
            - rsulogtx.csv: This log is generated by combining all the logs at interface tx.
            - rsulogtxb.csv: This log is generated by combining all the logs at interface txb.
        - **afternoon_1**: (where X = {tx,txb} and Y is the different timestamps that are recorded in the filenames)
            - RSU_4_1_cw-mon-X-Y.csv and .pcap: RSU logs for all messages recorded at interface X. There are multiple logs with different Y's and the value of Y determines when the logs were completed.
            - RSU_4_1_cw-mon-X-Y_spat.csv: RSU logs for SPAT messages recorded at interface X. There are multiple logs with different Y's and the value of Y determines when the logs were completed.
            - rsulogafternoon_tx.csv: This log is generated by combining all the logs at interface tx.
            - rsulogafternoon_txb.csv: This log is generated by combining all the logs at interface txb.
            - rsulogafternoon.csv: This log is generated by combining all the logs.
    - **VCCLOG_09_26_mov:** This folder contains logs for the moving (mov) vehicle
        - **OBUCapture**: (where Y = {1,2,3,4})
            - textYspat.csv: raw OBU logs in csv format for SPAT message collected at the moving vehicle.
            - testY.csv and .pcap: This includes OBU logs and all the messages received during the test.

        - vccmov.csv: This file contains SPAT messages, recorded through VCC using cellular networks, at the laptop installed in the moving vehicle.
    - **VCCLOG_09_26_sta:** This is the folder for logs collected at the stationary vehicle during the test. The filenames have similar structures as the moving vehicle logs.

- **RAW_TEST_10_09.zip:** All data logs for test conducted on 10/09/2019. This time we were only able to conduct three test runs 1A, 1B, and 2A.
    - **OBUCapture**: Contains OBU logs for all the test runs. These can be BSM and SPAT.
        - runX_rxb.csv and .pcap: These contain receive logs at the OBU on the moving vehicle. The values for X can be {1A, 1B and 2A}. The receive logs contain SPAT message coming from all the intersections.
        - runX_txb.csv and .pcap: These contain transmit logs at the OBU on the moving vehicle. The transmit logs contain BSM. The values for X can be {1A, 1B and 2A}
    - **RSUCapture**: These files contain RSU logs for the SPAT broadcasts from the RSUs
        - rsulog.csv: This is the combined file for all the RSU SPAT broadcasts logged at the RSU during this day of test.
        - spat_vcc.csv and .pcap: This file was also captured at the RSU but it includes messages being sent to the VCC cloud from the RSU's backhaul network. This file was only used for internal analysis of any issues with latency at different locations and never used in the final output of the project
        - tx_X.csv and .pcap: These are transmit logs of SPAT and MAP messages being transmitted by the RSU at X interfaces. X can be r1a, r1c1,r1c2,r1c3 and r1c4. Among these files, files where X = r1a was not used for the analysis as it was not complete. The other files that contain X = {r1c1, r1c2, r1c3, r1c4} contain the logs that are grouped incrementally over time.
    - vccmov.csv: This file contains SPAT messages, recorded through VCC using cellular networks, at the laptop installed in the moving vehicle.

- **RAW_TEST_11_07.zip:** All data logs for test conducted on 11/07/2019. This test was conducted on the arterial network with different intersections. The intersections ids are X = {115,116,119,122}, which corresponds to intersections at Barkley Dr, Cedar Ln, Javier Rd, and William Dr. Two tests run were made, test 1 and test 2 (also called test 1a and test 2a). An extension of .pcap1 may be used when multiple pcap captures were generated per session.
    - **RSULOG**
        - **BarkleyDr_1:** RSU logs at Barkley Dr intersection for test 1 (first session)
            - tx_Y.csv and .pcap: with Y = {ota, ota1, ota2, ota3, r1a, r1c}, these files contain transmitted logs for all messages from the RSU over the DSRC network, in csv and pcap formats.

- **BarkleyDr_2:** RSU logs at Barkley Dr intersection for test 2 (second session)
  - RSU_4_1_cw-mon-X-Y.csv and .pcap: where X = {tx,tx1,tx2,txa,txb} and Y is the different timestamps that are recorded in the filenames, these files contain logs at the RSU for all the messages being transmitted.
- **CedarLn_1:** Same logs and filenames as in BarkleyDr_1
- **CedarLn_2:** Same logs and filenames as in BarkleyDr_2
- **JavierRd_1:** Same logs and filenames as in BarkleyDr_1
- **JavierRd_2:** Does not exist since we did not receive logs from this location.
- **WilliamDr_1:** Same logs and filenames as in BarkleyDr_1
- **WilliamDr_2:** Same logs and filenames as in BarkleyDr_2

- **Test_Hwy50_Mobile:** Logs recorded at the moving vehicle along Hwy 50. In the file names, Y = test session {1a,2a}.
  - **OBUCapture:** Logs recorded at the OBU
    - mobiletestYrxb.csv and .pcap: this file contains the receive logs at the OBU for all the messages received.
    - mobiletestYtxb.csv and .pcap: this file contains the BSM messages transmitted by the OBU.
  - allMobileVccLog.csv: This file contains all the messages logged from VCC at the moving vehicle laptop. These messages are from all four intersections of interest.
- **TestHwy_50_stationary:** Logs collected at the stationary vehicle during the test**.** In the file names, Y = test session {1a,2a}.
  - **OBUCapture:** Logs recorded at the OBU
    - stationary_testYrxb.csv and .pcap: this file contains the receive logs at the OBU for all the messages received.
    - stationary_testYtxb.csv and .pcap: this file contains the BSM messages transmitted by the OBU.
  - vcclogXsta: Where X = intersection name {Barkley, Cedar, Javier, William}. Contains the timestamp and message received through cellular network using VCC server from intersection X.